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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,363	04/14/2005	Stig-Erik Hultholm	4819-4738	6979
27123 7590 01/02/2008 MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER MCGUTHRY BANKS, TIMA MICHELE	
			ART UNIT	PAPER NUMBER
			1793	
			NOTIFICATION DATE	DELIVERY MODE
			01/02/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOPatentCommunications@Morganfinnegan.com  
Shopkins@Morganfinnegan.com  
jmedina@Morganfinnegan.com

## Office Action Summary

Application No.

10/531,363

Applicant(s)

HULTHOLM ET AL.

Examiner

Tima M. McGuthry-Banks

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/14/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1793

Claims 1-9, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demarthe et al (US 4,230,487) in view of Jensen US 4,272,492 and Watanabe et al (US 7,065,857 B2).

Demarthe et al teaches a method for selectively solubilizing the non-ferrous metals in sulfurized ores and concentrates. Copper, lead zinc and precious metals are brought into solution selectively with regard to iron and sulfur (column 1, lines 13-16). The lixiviant is a cupric chloride solution, and a regenerating agent includes HCl (column 2, lines 33-40). The oxidation-reduction potential of the lixiviant solution is controlled between 400-800 mV (lines 61-63) in relation to a hydrogen electrode potential (column 4, lines 12 and 13). The potential is adjusted by the rate of delivery of air (column 6, lines 6-8). Regarding Claims 2 and 3, air and oxygen are equivalent. Regarding Claim 11, the sulfurized ores and concentrates contain precious metals. Regarding Claim 13, the pH range is 1-3 (abstract). However, Demarthe et al does not teach the further steps of feeding, separating, transferring, and feeding as in Claims 1 and 4-9 or using an Ag/AgCl electrode as in Claim 1

Regarding the further steps in Claims 1 and 4-9, Jensen teaches selectively extracting and recovering copper from acidic solutions such as those obtained by leaching copper ore (column 3, lines 62 and 63).

Art Unit: 1793

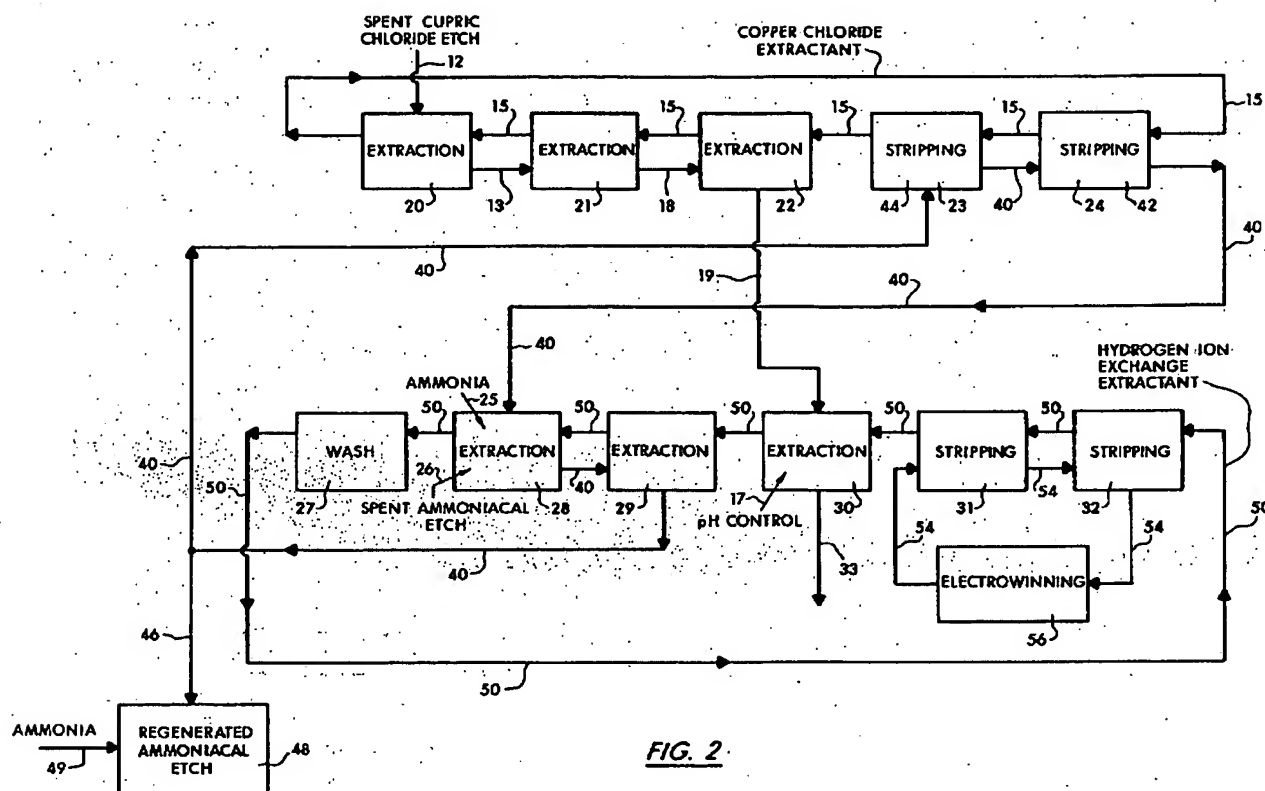


FIG. 2

The copper feed is fed to a copper extraction unit using liquid-liquid extraction. The extractant selectively extracts copper (column 4, lines 24-37). The extractant is transported to a stripping unit. The stripping solution is aqueous sulfuric acid (column 5, lines 33 and 34). The pregnant stripping solution is fed to a copper electrowinning unit (column 5, lines 51-53). Regarding Claim 4, the extraction can be done in a plurality of stages (column 4, lines 37 and 38).

Regarding Claim 5, line 15 in Figure 2 returns to the first extraction. Regarding Claim 6, ammonia or sodium carbonate may be introduced into the extraction stage to maintain the pH to effectively utilize the copper loading capability of the extractant via 17 (column 8, lines 13-30). Regarding Claim 7, Figure 2 shows parallel flow. Regarding Claim 8, the extraction unit operates at 35 °C (column 16, line 34). Regarding Claim 9, line 54 (sulfuric acid) in Figure 2

Art Unit: 1793

comes from electrowinning stage 56 to stripping stage 31 (column 11, lines 20-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the copper recovery process of Jensen with the process of DeMarthe et al, since Jensen teaches that liquid-liquid extraction of copper is well known (column 1, lines 45-65), stripping and electrowinning is well known (column 2, lines 30-33); furthermore, the disclosed process economically and effectively utilizes extractants and provides a diversified copper product (column 18, lines 35-40).

Regarding using an Ag/AgCl electrode in Claim 1, Watanabe et al teaches measuring voltammetry using either a hydrogen electrode or an Ag/AgCl electrode as a reference potential (column 36, lines 5-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use either an Ag/AgCl or a hydrogen electrode in the process of DeMarthe et al, since Watanabe et al teaches that these electrodes are equivalent in the art of measuring voltammetry.

Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarthe et al in view of Jensen and Watanabe et al as applied to claim 1 above, and further in view of Ray et al (US 3,476,553).

DeMarthe et al in view of Jensen and Watanabe et al disclose the invention substantially as claimed. However, DeMarthe et al in view of Jensen and Watanabe et al does not disclose using alkali hydroxide precipitation as claimed. Ray et al teaches recovering metals in solution by introducing hydroxyl ions (column 1, lines 16-18). Examples of hydroxides include Na, Li, Rb, K and Cs (column 2, lines 55 and 56). Regarding Claim 14, the metals include Ni, Co and Zn (lines 26 and 27). It would have been obvious to one of ordinary skill in the art at the time

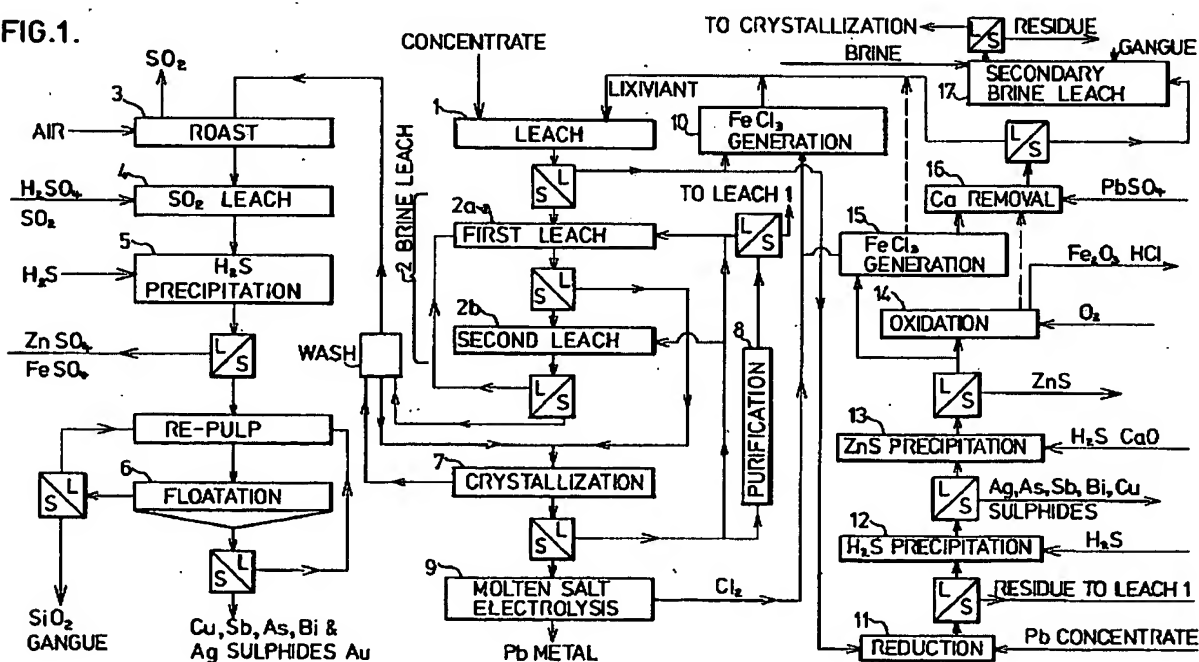
Art Unit: 1793

the invention was made to use alkali hydroxide precipitation to recover metals other than copper in the process of DeMarthe et al in view of Jensen and Watanabe et al, since this process is an economical process for recovering metals from solution with high recovery and selectivity (column 1, lines 67 to column 2, lines 2).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarthe et al in view of Jensen and Watanabe et al as applied to claims 1 and 11 above, and further in view of Milner et al (US 4,082,629).

DeMarthe et al in view of Jensen and Watanabe et al discloses the invention substantially as claimed. However, DeMarthe et al in view of Jensen and Watanabe et al does not disclose the precipitation step as claimed. Milner et al teaches treating complex sulfide concentrates. The solid leach residue containing iron, precious metals and sulfur is shown in Figure 1 (see also column 6, lines 21 and 22).

FIG.1.

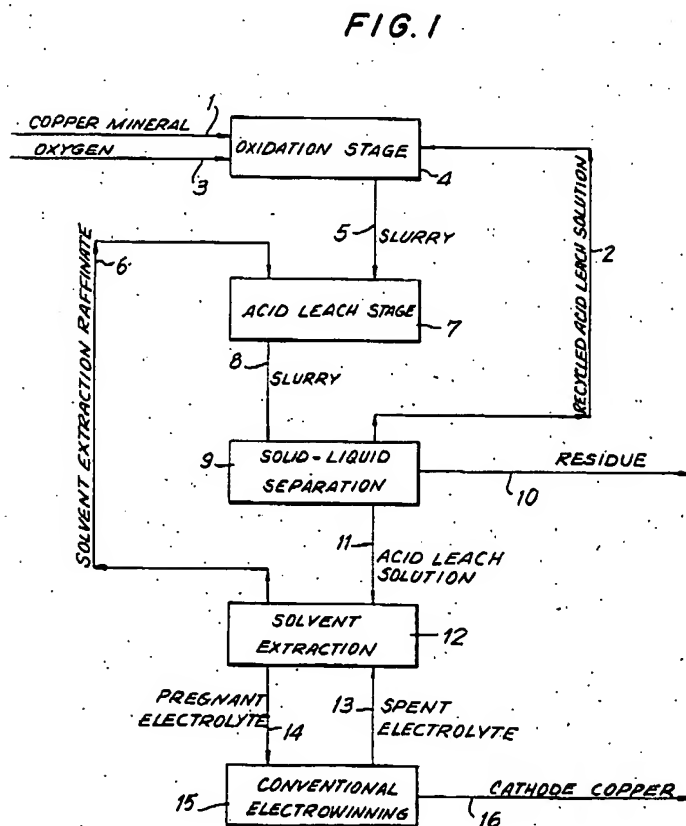


Art Unit: 1793

The combination of DeMarthe et al in view of Jensen and Watanabe et al and Milner et al would have yielded the predictable result of recovering desired metals present in the sulfide concentrates.

### Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Satchel, Jr et al (US 4,594,132) teaches extractive metallurgy from sulfides as shown in Figure 1 below:





Art Unit: 1793

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tima M. McGuthry-Banks whose telephone number is (571) 272-2744. The examiner can normally be reached on M-F 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
TMM  
17 December 2007

  
**ROY KING**  
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